

**GHM - GREISINGER**

## **E.A.S.Y.Bus®**

*The intelligent, universal and  
economic solution*



**Measuring • Controlling • Regulating • Monitoring • Recording**

*Temperature • Humidity • Climate • CO<sub>2</sub> • CO  
Sensors for frequency or standardized signals*

... professional Instruments „MADE IN GERMANY“

**GHM**  
MESSTECHNIK



## E.A.S.Y.Bus®

The EASYBus system is based on the principle of the »M-Bus« (Meter-Bus).

The M-Bus is a stable data bus system, designed and optimized in collaboration with significant industrial firms.

### Advantages of EASYBus

- Minimal amount of planning
- Economic display and monitoring system for several measuring points as well as an optimum cost/performance ratio
- High flexibility: Subsequent modification and extension is possible at any time
- Future-proof and modern technology on the basis of digital signal transmission
- Central data acquisition over far distances

### Typical scope of application

- Cooling chambers / storage houses (temperature monitoring)
- Heating systems / air condition and ventilation plants (temperature, relative humidity, CO<sub>2</sub> monitoring)
- Utility rooms / plant rooms / computer rooms / laboratories (temperature, relative humidity)
- Museums and exhibition rooms (temperature, relative humidity)
- Manufacturing rooms (temperature, relative humidity, CO<sub>2</sub>)
- Storage rooms (temperature, humidity, dew point)
- Greenhouses (temperature, humidity, CO<sub>2</sub>)
- Parking garages (CO monitoring)

### The system components

- Numerous sensor modules available (with or without data logging)
- Devices for centralized data collection (measuring, regulating and displaying requested data)
- Devices for decentralized data collection
- Level converter
- EASYBus software (data collection and visualization)
- Further system components, e.g. for remote operation
- Comprehensive range of accessories

### Available EASYBus sensor modules

- Temperature (Pt100, Pt1000)
- Humidity / temperature / atmospheric pressure (relative humidity, dew point temperature, mixing ratio, absolute humidity, ...)
- Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO)
- Frequency, rotary speed, flow rate, state registration, ...
- Quantity (upward / downward counter)
- Data loggers
- Standardized signal modules for user-defined sensors (4 ... 20 mA, 0 ... 20 mA, 0 ... 50 mV, 0 ... 1 V, 0 ... 2 V, 0 ... 10 V)

### Scope of application



#### Temperature monitoring and regulation:

Cooling chambers  
Laboratory + utility rooms  
Storage rooms



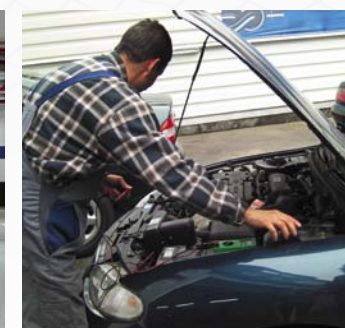
#### Relative humidity / dew point / temperature monitoring:

Storage rooms  
Heating systems / air condition / ventilation plants  
Museums / exhibition rooms  
Libraries / laboratories + utility rooms



#### Relative humidity / atmospheric pressure, CO<sub>2</sub> monitoring:

Manufacturing rooms / storage rooms  
Office rooms (to condition the air of the room)  
Greenhouses



#### CO monitoring:

Underground garages / Parking garages  
Motorcar garage / car repair  
Indoor go-kart tracks

## Principle overview

### Characteristics of the EASYBus system

- Low-cost wiring by using a twisted 2-pin connection line in either bus, star or tree design (polarity-free); can be used in any combination
- Bus line for simultaneous power supply and signal transmission
- Bus length up to 1000 m, extensible by using a repeater
- Fully automatic start-up installation via software
- Connection of up to 240 sensor modules
- Optimum transmission reliability by means of CRC check
- Bus system is able to process data up to 20 measuring values per second
- Response time inside the EASYBus system ca. 1 s; but approx. 20 ms by using a local controlling system

### The EASYBus hardware

- 2-pin connection line, based on the principle of the »M-Bus«
- Polarity-free bus connection
- Bus system voltage 36 V DC, minimum 24 V DC
- Maximum allowable bus power loss: 12 V DC
- Master/slave system; data transmission of the slaves only on demand

### EASYBus definition

#### • Sensor module

A module with min. one measuring input, that could be connected to an EASYBus converter or an EASYBus master (i.e. EB 3000).

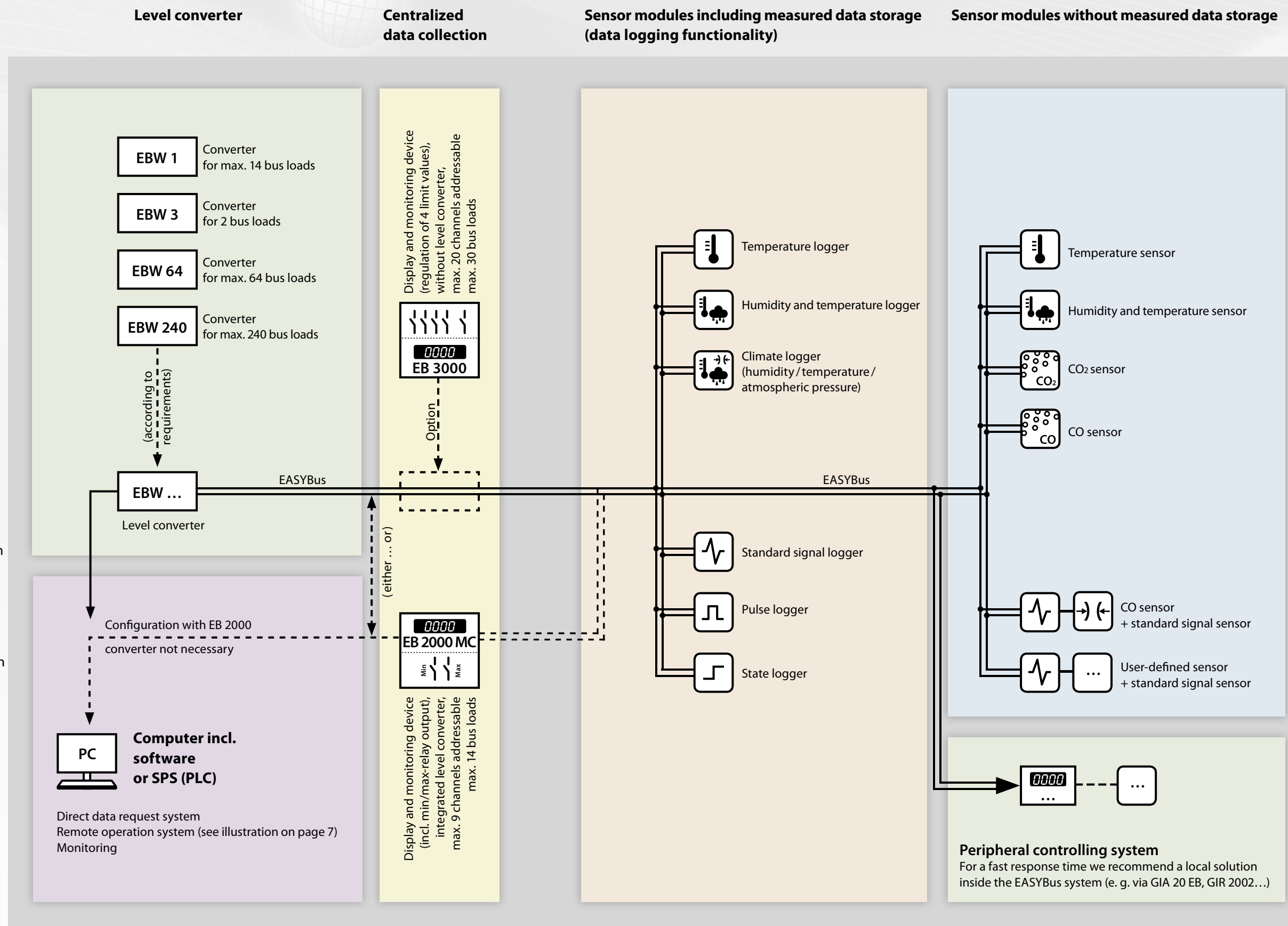
#### • Measuring channel

Every sensor module has one addressable measuring channel for every mesurand (i.e. EBHT-1R has two measuring channels for humidity and temperature).

#### • Bus load

Load for the EASYBus from connected sensor modules (1 bus load  $\hat{=}$  1,5 mA).

## The EASYBus system

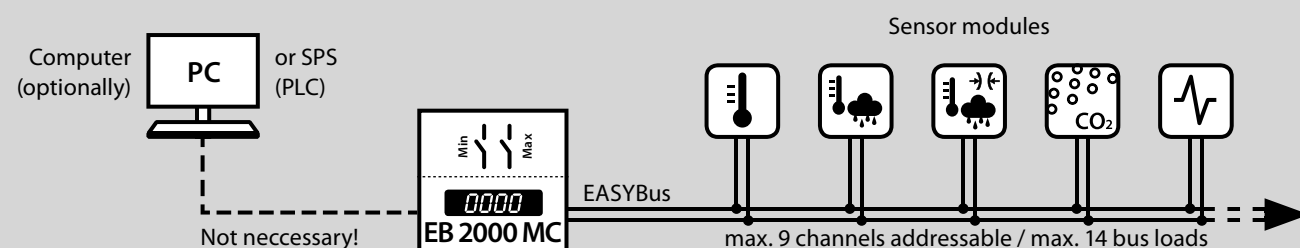




## Representative examples

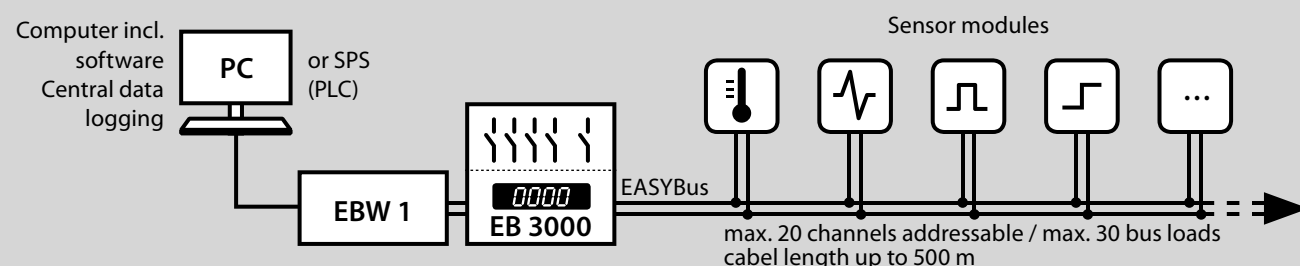
### EASYBus basis system

### Alarm control

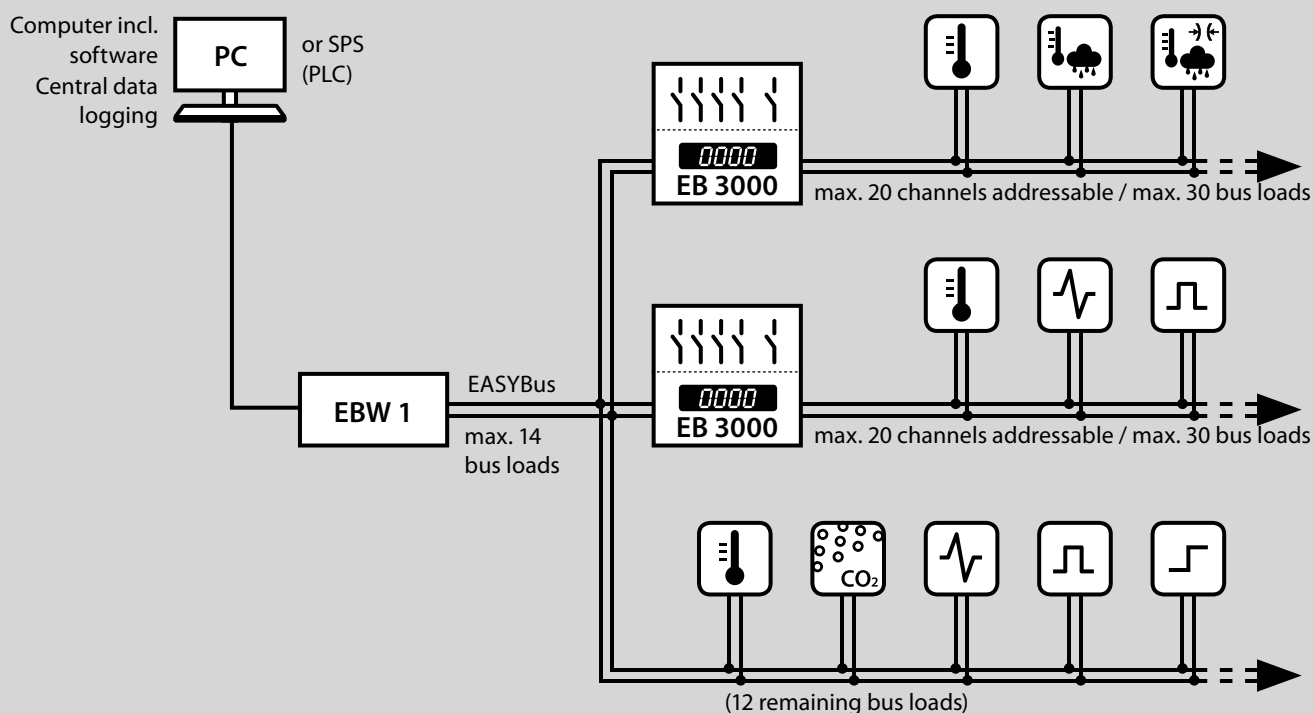


### EASYBus basis system including EB 3000 and EBW 1

### Monitoring and controlling

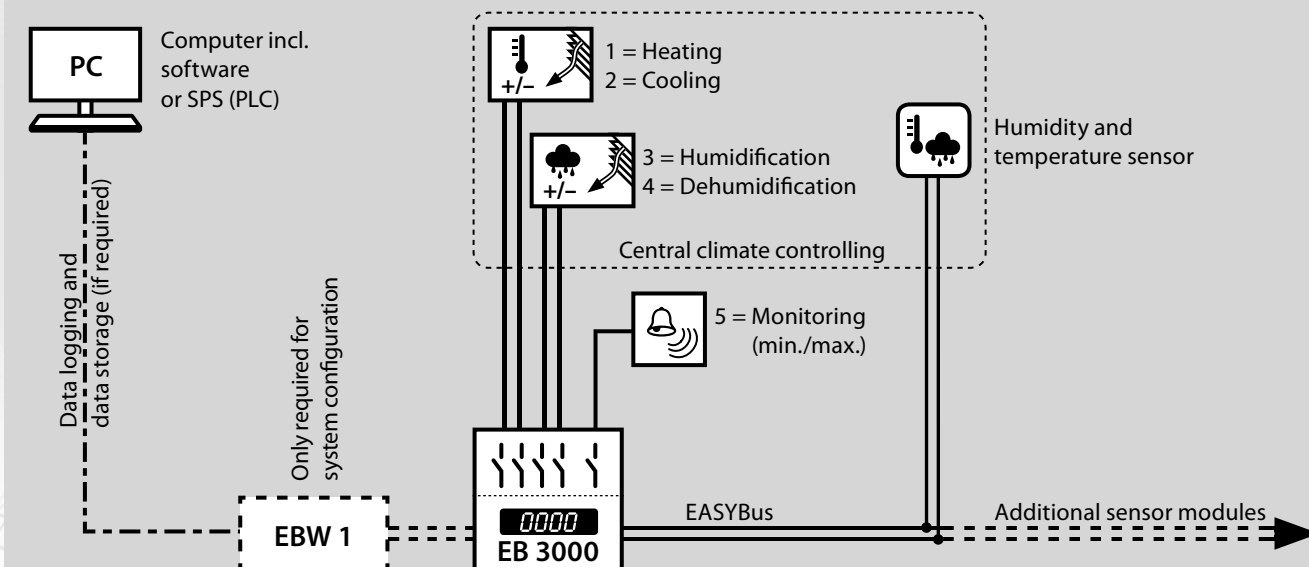


### EASYBus system with local sub-assembly groups | EBW 1 and 2 x EB 3000

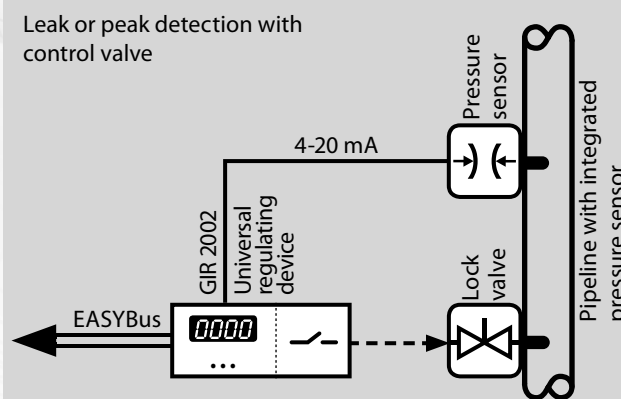


## Application examples

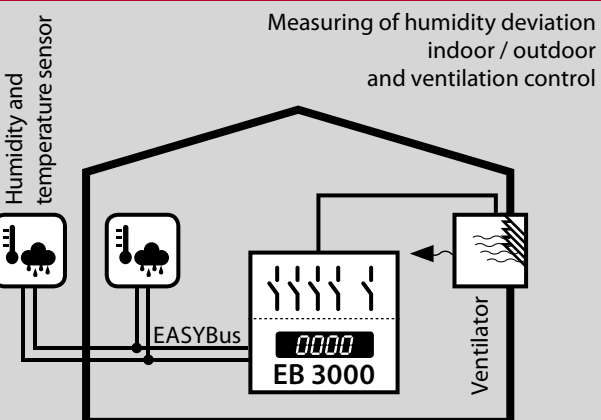
### Climate control with EB 3000



### Peripheral loop control system Quick pressure peaks or leak monitoring



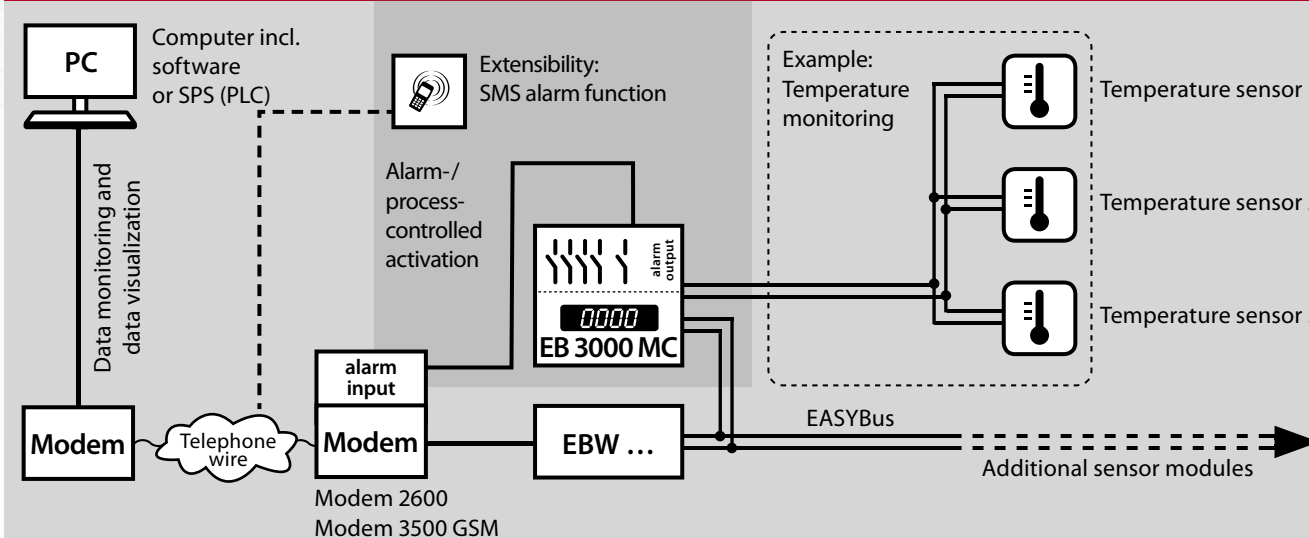
### Indoor humidity optimization with EB 3000



### Remote operation

### SMS alarm function

### Remote operation system



\*The exact number of lockable units is depending on the maximum bus load value.

## Sensor modules without value memory\*

### Temperature probe



EBT - IF 1  
(without threat,  
adequate for clamp ring connection)



EBT - IF 2  
(with threat G $\frac{1}{2}$ " )



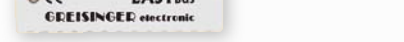
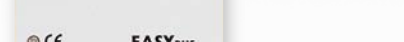
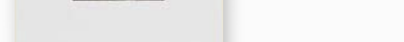
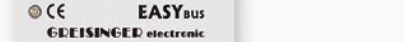
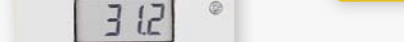
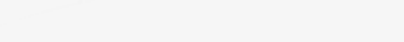
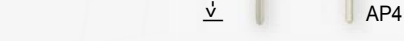
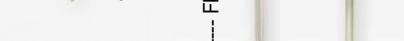
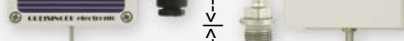
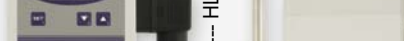
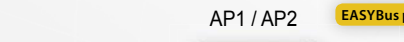
EBT - IF 3  
(with threat G $\frac{1}{2}$ " and collar tube)

probes made of stainless steel	EBT - IF 1 **	EBT - IF 2 **	EBT - IF 3 **
Measuring range	-30,0 ... +100,0 °C	-30,0 ... +100,0 °C	-70,0 ... +400,0 °C
Sensor / probe tube	Internal Pt1000-sensor / probe tube $\varnothing$ 6 mm		
Type (measuring probe)	DIN Class B (higher accuracy available)		
Accuracy	$\pm 0.2$ % of meas. value $\pm 0.2$ °C (at nominal temperature = 25 °C)		
Operating temperature	-25.0 ... +70.0 °C (operating temperature of the electronics in sleeve)		
Cable sleeve	$\varnothing$ 15 x 35 mm (without screwing)		
Process connection	—	threat G $\frac{1}{2}$ "	threat G $\frac{1}{2}$ "
Length (probe)	FL = 100 mm	FL = 100 mm	FL = 50 mm
Length (collar tube)	—	—	HL = 100 mm
Housing / design	stainless steel V4A (sealed)		
Bus load	1,5	1,5	1,5

#### Advantages:

- corrosion-resistant and robust design • min- / max- value memory • offset and slope adjustable

### Temperature module

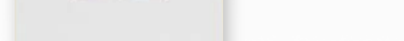
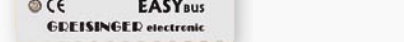
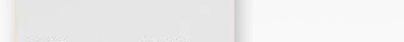
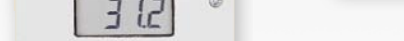


	EBT - AP1 **	EBT - AP2 **	EBT - AP3/4 **
Measuring range (standard)	-50,0 ... +150,0 °C	-50,0 ... +400,0 °C	-50,0 ... +150,0 °C
Accuracy (temperature)	$\pm 0.2$ % of meas. value $\pm 0.2$ °C (at nominal temperature = 25 °C)		
Electric connection	angular connector DIN 43650 (IP65)		
Process connection	threat G $\frac{1}{2}$ "	threat G $\frac{1}{2}$ "	—
Position of sensor tube	on the side	on the side	on the side bottom
Length (probe)	FL = 100 mm	FL = 100 mm	FL = 50 mm FL = 100 mm
Length (neck tube)	—	HL = 50 mm	—
Dimension (housing)	82 x 80 x 55 mm (L x W x H)		
Bus load	1,5	1,5	1,5

#### Advantages:

- robust industrial design (gray) • impermeable to splash-water (IP65) • min- / max- value memory • optionally with LCD-display • also available without sensor (design type 5). For connection of external sensors

### Temperature module

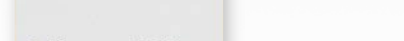


	EBT - 2R **	EBT - 2RE **
Temperature probe	integrated in housing	External sensor (V4A / $\varnothing$ 5 x 50 mm / 1 m)
Sensor element	Temperature sensor Pt1000 according DIN IEC 751	
Measuring range	-25,0 ... +70,0 °C	-50,0 ... +150,0 °C
Accuracy	$\pm 0.4$ % of meas. value $\pm 0.3$ °C (at nominal temperature = 25 °C)	
Resolution	0,1 °C	
Dimension	70 x 70 x 26 mm (L x W x H)	
Bus load	1,5	1,5

#### Advantages:

- elegant housing for surface mounting (white) • in-wall installation • optionally with LCD-display

### Humidity-/ temperature module



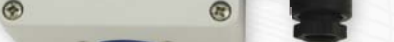
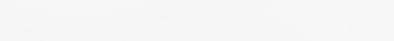
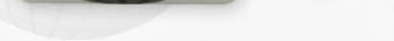
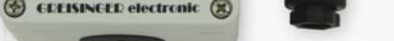
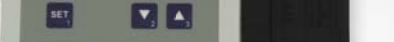
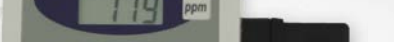
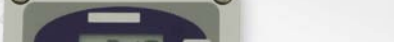
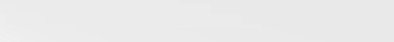
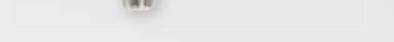
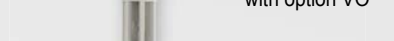
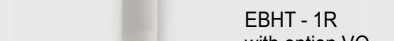
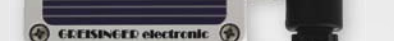
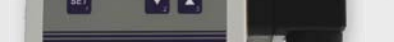
	EBHT - 2R **
Measuring range (standard)	0,0 ... 100 % r. F. / -25,0 ... +70,0 °C
Accuracy humidity (standard)	$\pm 2,5$ % RH (at range 30 ... 80 % RH/ optionally at range 5 ... 95 % RH)
Accuracy temperature	$\pm 0.4$ % of meas. value $\pm 0.3$ °C (at nominal temperature = 25 °C)
Resolution	0,1 % RH / 0,1 °C
Dimension	70 x 70 x 26 mm (L x W x H)
Bus load	1,5

#### Advantages:

- elegant housing for surface mounting (white) • in-wall installation • optionally with LCD-display

## Sensor modules without value memory\*

### Humidity-/ temperature module

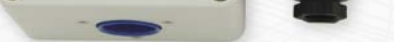
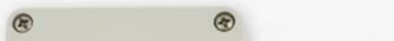
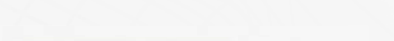
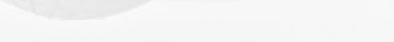
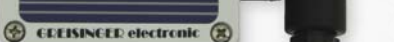
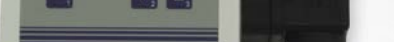
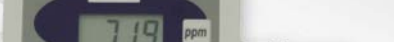


	EBHT - 1K **	EBHT - 1R **	EBT - 2K **
Measuring range (standard)	0,0 ... 100 % RH / -40,0 ... +120,0 °C		
Accuracy humidity (standard)	$\pm 2,5$ % RH (at range 30 ... 80 % RH/ optionally at range 5 ... 95 % RH)		
Accuracy temperature	$\pm 0.4$ % of meas. value $\pm 0.2$ °C (at nominal temperature = 25 °C)		
Resolution	0,1 % RH and 0,1 °C / 0,1 °F		
Electric connection	angular connector DIN 43650 (IP65)		
Position of sensor tube	on the side	on the side	bottom
Length (probe)	FL = 220 mm	FL = 50 mm	FL = 220 mm
Dimension (housing)	82 x 80 x 55 mm (L x W x H)		
Bus load	1,5	1,5	1,5

#### Advantages:

- robust industrial design (gray) • min- / max- value memory • optionally with LCD-display for an on-the-spot adjustment and operation

### Carbon dioxide module

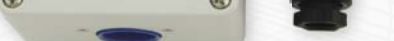
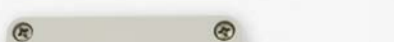
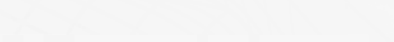


	EBG - CO2 - 1R **
Measuring range	0 ... 2000 ppm CO <sub>2</sub>
Measuring principle	Infrared method (NDIR)
Accuracy	$\pm 50$ ppm $\pm 2$ % of meas. value
Auxiliary energy	12 ... 30 V DC, max. 600 mA
Electric connection	angular connector DIN 43650 (IP65)
Dimension (housing)	82 x 80 x 55 mm (L x W x H)
Bus load	1

#### Advantages:

- robust industrial design (gray) • min- / max- value memory • automatic calibration • with integrated LCD-display for an on-the-spot adjustment and operation

### Carbon monoxide module



	EBG - CO - 1R**
Measuring range	0 ... 300 ppm CO (carbon monoxide)
Measuring principle	electrochemical method, continuous measuring
Accuracy	$\leq 2$ % of 300 ppm CO (cross sensitivity / linearity error acc. to VDI2053)
Auxiliary energy	14 ... 28 V DC, max. 50 mA
Electric connection	angular connector DIN 43650 (IP65)
Dimension (housing)	82 x 80 x 55 mm (L x W x H)
Bus load	2

#### Field of application:

- underground parking lots, car parks, boiler plants and heating systems, car workshops etc.

#### Advantages:

- robust industrial design (gray) • Automatic zero point adjustment

### Standard signal module



	EBN / K **	EBN / W **
Measuring range	-1999 ... 9999 Digit (scale freely adjustable)	
Input signal **	0 - 2 V / 0 - 10 V / 0 - 20 mA / 4 - 20 mA (only one of these)	
Accuracy	$\pm 0,5$ % FS (at nominal temperature = 25 °C)	
Type (electric connection)	0,5 m connection cable, loose ends	angular connector (DIN 43650)
Dimension (housing)	48,5 x 48,5 x 35,5 mm (L x W x H)	
Bus load	2	2

#### Advantages:

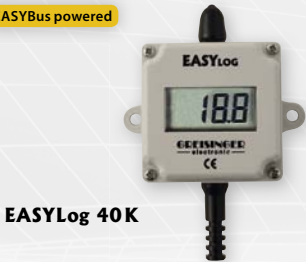
- industrial design, impermeable to splash-water (IP65) • Monitoring of up to 150 transmitters possible (via interface converter)



Sensor modules with value memory (logger function) \*

Temperature logger

EASYBus powered



EASYLog 40K

EASYBus powered

6 years battery lifetime in stand-alone mode



EASYLog 40KH...

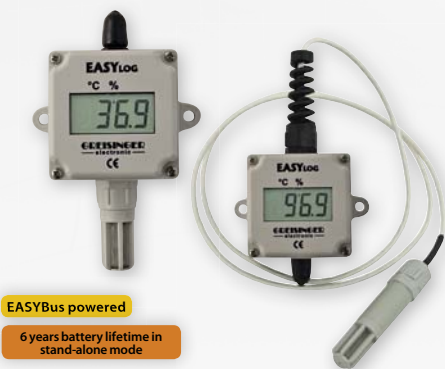
	EASYLog 40K **	EASYLog 40KH **
Design (sensor tube)	plastic, Ø 7 × 30 mm, attached on device	A, Ø 5 × 50 mm, silicone cable 1 m
Measuring range	-25,0 ... +60,0 °C	-50,0 ... +150,0 °C
Accuracy	±0,5 °C (at nominal temperature= 25 °C)	
Storage capacity	48.000 measuring values	
Recording	interval from 2 sec to 5 h / recording time: 500 days (if interval is 15 min)	
Dimension (housing)	48,5 × 48,5 × 35,5 mm (L × W × H)	
Bus load	2	

	EASYLog 40KH-E300 **	EASYLog 40KH-E600 **
Design (sensor tube)	VA, Ø 3 × 100 mm, cable sleeve glass silk cable 1 m	VA, Ø 3 × 100 mm, cable sleeve silicone cable 1 m
Measuring range	-50,0 ... +300,0 °C	0 ... +600 °C
Accuracy (at nominal temp.)	±0,5 °C ±0,2 % of meas. value	±1 °C ±0,2 % of meas. value
Storage capacity	48.000 measuring values	
Recording	interval from 2 s to 5 h / recording time: 500 days (if interval is 15 min)	
Dimension (housing)	48,5 × 48,5 × 35,5 mm (L × W × H)	
Bus load	2	

Advantages:

- industrial design, impermeable to splash-water (IP65) • LCD-display • battery service life approx. 6 years (if interval is 15 min)

Humidity / temperature logger



EASYBus powered

6 years battery lifetime in stand-alone mode

EASYLog 24RFT | EASYLog 24RFT-E

	EASYLog 24RFT **	EASYLog 24RFT-E **
Design (sensor tube)	polyamide , Ø 15 mm, attached	PVDF, Ø 14 × 68 mm, teflon cable 1 m
Measuring range	0,0 ... 100 % RH / -25,0 ... +60,0 °C	
Accuracy (humidity)	≤ ±3 % (at range 11 ... 90 % RH)	
Accuracy (temperature)	± 0,5 °C (at nominal temperature = 25 °C)	
Storage capacity	48.000 measuring values	
Recording	interval from 4 s to 5 h / recording time: 500 days (if interval is 15 min)	
Dimension (housing)	48,5 × 48,5 × 35,5 mm (L × W × H)	
Bus load	2	

Advantages:

- 2x sensor: temperature, humidity • industrial design, impermeable to splash-water (IP65) (except protection cap) • LCD-display • battery service life approx. 6 years (if interval is 15 min)

Climate logger



EASYBus powered

6 years battery lifetime in stand-alone mode

	EASYLog 80CL **
Design (sensor tube)	polyamide , Ø 15 mm, attached on device
Measuring range	0.0 ... 100 % RH / -25.0 ... +60.0 °C / 300.0 ... 1100.0 hPa
Accuracy	±2 % (humidity) / ±0.3 °C ±0.017 * (T - 25 °C) / ±1.0 hPa (pressure)
Storage capacity	250 000 values for each meas. variable (in max. 64 recording sequences)
Recording	interval from 4 s to 5 h / recording time: 7 years (if interval is 15 min)
Special features	double display, add. meas. variables (i.e. dew point temp. / wet bulb temp.)
Dimension (housing)	48,5 × 48,5 × 35,5 mm (L × W × H)
Bus load	2

Advantages:

- 3x sensor: temperature, air pressure, humidity • industrial design, impermeable to splash-water (IP65) (except protection cap) • with integrated LCD-display for an on-the-spot adjustment and operation • battery service life approx. 5 years (if interval is 15 min)

Sensor modules with value memory (logger function) \*

Standard signal logger

EASYBus powered

6 years battery lifetime in stand-alone mode



EASYLOG 40NS W | EASYLOG 40NS K

	EASYLog 40NS W **	EASYLog 40NS K **
Design (sensor tube)	angular connector (DIN 43650)	screwing and connection cable
Display range	-1999 ... 9999 Digit (scale freely adjustable)	
Decimal point	arbitrarily settable	
Input signal	0 - 2 V / 0 - 10 V / 0 - 20 mA / 4 - 20 mA (only one of these)	
Accuracy	± 0,5 % FS (at nominal temperature = 25 °C)	
Storage capacity	48.000 measuring values	
Recording	interval from 2 s to 5 h / recording time: 500 days (if interval is 15 min)	
Dimension (housing)	48,5 × 48,5 × 35,5 mm (L × W × H)	
Bus load	2	

Field of application:

- Connection of any standard signal sensor modules to the EASYBus

Advantages:

- industrial design, impermeable to splash-water (IP65) (red) • LCD-display • can substitute expensive recorder • battery service life approx. 6 years (if interval is 15 min)

Pulse logger

EASYBus powered

6 years battery lifetime in stand-alone mode



	EASYLog 40IMP/S **	EASYLog 40IMP/T **
Design (sensor tube)	screwing and connection cable (0.5m, loose ends)	
Resolution display/storage	1 digit	
Input signal	passive volt-free switching contact	active TTL-signal
Accuracy	cycle time ± 50 ms	
Measuring range	0 ... 30.000 pulses/cycle	
Storage capacity	48.000 measuring values	
Recording	interval from 2 s to 5 h / recording time: 500 days (if interval is 15 min)	
Dimension (housing)	48,5 × 48,5 × 35,5 mm (L × W × H)	
Bus load	2	

Advantages:

- industrial design, impermeable to splash-water (IP65) • LCD-display • battery service life approx. 6 years (if interval is 15 min)

State logger

EASYBus powered

6 Jahre Batterie-Lebensdauer im Stand-Alone-Modus



	EASYLog 40BIN **
Design (sensor tube)	screwing and connection cable (0.5 m, loose ends)
Resolution display/storage	1 digit
Input signal	passive volt-free switching contact
Display range	0 (on) / 1 (off)
Measuring value	0 = contact open, 1 = contact closed
Cycle	2 s to 5 h
Storage capacity	48.000 measuring values
Recording	interval from 2 s to 5 h / recording time: 500 days (if interval is 15 min)
Battery service life	approx. 6 years (if interval is 15 min)
Dimension (housing)	48,5 × 48,5 × 35,5 mm (L × W × H)
Bus load	2

Field of application:

- Recording of operating states • Determining of the operating time of machines

Advantages:

- industrial design, impermeable to splash-water (IP65) • LCD-display • battery service life approx. 6 years (if interval is 15 min)



Central data collection\*

Display / regulating / monitoring



EASYBus-device	EB 3000
Input	EASYBus Max. 20 channels addressable / max. 30 bus loads Max. cable length: approx. 500 m (depending on wiring)
Display	4-digit LED (measured value), 2-digit LED (channel)
Switching outputs	4 normally open contacts
Alarm output	1 change-over contact
PC interface	EASYBus
Particularities	Interface converter required (EBW ...)
Power supply	230 V AC, 50/60 Hz
Dimension (housing)	48 × 96 × 100 mm (H × W × D)
Bus load	EB-input: 1

Advantages / Field of application:

- all basic functions are operable via the buttons
- comfortable and easy configuration via the "EASYBUS-Configurator" software.
- integrated min-/max boundary value for up to 20 sensors, this ensures the alarm monitoring of all connected sensor modules
- 4 boundary value relay outputs offer multiple regulating functions (i.e. 4x 2-point controller, 2x 3-point controller, 4-contact switch)
- up to 20 EASYBus modules can be connected

Special feature:

New values can be calculated from the values of the connected sensor modules (i.e. average, maximum value, sum, difference, etc.) by mathematical functions. This calculated values occupy one channel and can therefore than be handled like that ones of connected sensor modules (boundary value, regulating, ...)

Decentralised regulating \*

Display / regulating



Can be uses as universal display or regulating in an EASYBus system!

Universal measuring/regulating device	GIR 2002	GIR 2002 PID
Control mode	On/Off-control mode	PID-control mode
Measuring input	standard signal, Pt100, Pt1000, thermocouple, frequency, flow rate, rotation speed, up-/down counter, serial interface	
Display / display range	4-digit LED display / -1999...9999 digit (stand. signal: scale freely adjustable)	
Switching output (volt-free)	1x change-over contact (250 V AC / 10A), 1x norm. open contact (250 V AC / 5A)	
Switching functions	display, 2-point-controller, 3-point-controller, 3-point-steppin-controller (only at PID) 2-point-controller with alarm, min-/max-alarm	
Interface	serial (electrically isolated), EASYBus compatible	
Transmitter supply	24 V DC / 20 mA (electrically isolated)	
Power supply	230 V AC, 50/60 Hz	
Dimensions (housing)	48 × 96 × 115 mm (H × W ×D)	
Bus load	1	

Advantages / Field of application:

- fast regulating and monitoring functions (reaction time < 25 ms at standard signal), alarm delay adjustable
- 5 programmable switch functions at GIR 2002 / 6 programmable switch functions at GIR 2002 PID
- large self-monitoring and diagnostic system, limit function, digital filter, min-/max- value memory
- P, PI, PD and PID control mode, 3-point-stepping-controller, continuous output (only at GIR 2002 PID)
- freely adjustable analog output 0(4)-20 mA, 0-10V and output for external solid state
- up to 240 devices connectable via the serial interface (EASYBus-compatible)

Display / monitoring



EASYBus-device	EB 2000 MC
Input	EASYBus Max. 9 channels addressable / max. 14 bus loads Max cable length: approx. 200 m (depending on wiring)
Display	4-digit LED (measured value), 9 LEDs (channel)
Switching outputs	2 normally open contacts, volt-free
Special feature	no interface converter required
PC interface	RS 232
Power supply	230 V AC, 50/60 Hz
Dimension (housing)	48 × 96 × 100 mm (H × W × D)

Advantages / Field of application:

- all basic functions are operable via the buttons
- comfortable and easy configuration via the "EASYBUS-Configurator" software.
- integrated min-/max boundary value for up to 9 sensors, this ensures the alarm monitoring of all connected sensor modules
- can be directly (without external interface converter) connected to the PC, because of the integrated RS 232 interface (EASYBus protocol)
- up to 9 EASYBus modules can be connected

Display / regulating



Can be uses as universal display or regulating device in an EASYBus system!

Universal measuring/regulating device	GIA 20 EB
Measuring input	standard signal, Pt100, Pt1000, thermocouple or frequency
Display / display range	4-digit LED display / -1999...9999 digit (stand. signal: scale freely adjustable)
Switching output	2 (integrated)
Switching functions	display, 2-point, 3-point, 2-point with alarm (or min-/max-alarm)
Interface	serial (electrically isolated), EASYBus compatible
Power supply	9 ... 28 V DC
Panel cut-out	21,7 ± 0,5 mm × 45,0 ± 0,5 mm (H × W)
Dimensions (housing)	24 × 48 mm (H × W), installing depth approx. 65 mm
Bus load	1

Advantages / Field of application:

- fast regulating and monitoring functions (reaction time < 25 ms at standard signal), alarm delay adjustable
- large self-monitoring and diagnostic system, limit function, digital filter, min-/max-value memory
- up to 240 devices connectable via the serial interface (EASYBus-compatible)

PROFIBus-connection



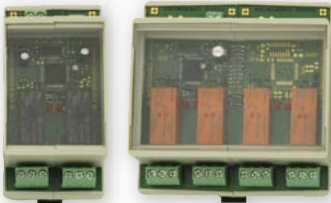
EASYBus-device	GW 110 PB
Input	PROFIBus DPV1 Slave EASYBus Master (via EBW1, 64 or 240)
Special feature	isolated PROFIBus interface
Power supply	10 ... 33 V DC
Dimension (housing)	without plug 23 × 115 × 100 mm (W × D × H)

Advantages / Field of application:

- Low-cost
  - Sensor wiring with cheap 2-pin connection (mixable bus topology)
  - No need of separate cabling (4 ... 20 mA or 0 ... 10 V) to each sensor
  - No need of expensive analog input modules
- Simple
  - Polarity free 2-pin connection
  - Mixable bus topology
  - Supply (of most EASYBus-modules) directly over the EASYBus

Switching module

EASYBus powered



	EBB 2 OUT / BP	EBB 2 OUT / 12V	EBB 4 OUT / BP	EBB 4 OUT / 12V
Power supply	BUS powered	12 VDC / 150 mA	BUS powered	12 VDC / 150 mA
Relay outputs	2 change-over contacts		4 change-over contacts	
Switching capacity	250 V AC / 16 A resistive load			
Switching reaction	< 1 s	< 0,1 s	< 2 s	< 0,1 s
Control	via EBUW 232 A or software EASYControl			
Bus load	2	1	2	1

Advantages:

- 2 (4) bistable switching contacts for decentral regulating / control functions
- several accumulative relays (min-, max- and system-alarm)
- control via EASYBus, no additional auxiliary energy required
- functional snap-on housing

\* More detailed product informations can be found in the Internet and in our catalogue.

\* More detailed product informations can be found in the Internet and in our catalogue.



## Interface converter \*

### Interface converter

EBW 1 | EBW 3



	EBW 1	EBW 3
Input	max. 14 bus loads	2 bus loads
Allowed EASYBus-length	200 m	2 m
Interfaces	PC: RS232 / sensor: EASYBus	PC: USB / sensor: EASYBus
Power supply	230 V AC, 50/60 Hz	none required (USB powered)
Dimensions (housing)	112 x 80 x 45 mm (L x W x H)	56 x 31 x 24 mm (L x W x H)



EBW 64 | EBW 240

	EBW 64	EBW 240
Input	max. 64 bus loads	max. 240 bus loads
Allowed EASYBus-length	1000 m	
Interfaces	PC: RS232 / Sensor: EASYBus	
Power supply	230 V AC, 50/60 Hz	
Dimensions (housing)	100 x 75 x 110 mm (L x W x H)	200 x 240 x 85 mm (L x W x H)

#### Field of application:

- Bidirectional interface converter, which allows to connect EASYBus-modules to a PC

## Remote enquiry system \*

### Remote enquiry system components / alarm monitoring

#### MODEM 2600

Analog hat-rail modem with password protection



- EASYBus remote enquiry via the analog telephone network as well as SMS-alerting
- can be used with: EBS 20M / EBS 60M, GSOF 40K
- Scope of delivery: modem incl. wall power supply, phone cable, protocol converter EBUW232, null modem cable, 9-pin. DSub connection cable

#### MODEM 3500 GSM

GSM-modem (for D1 or D2) with password protection



- EASYBus remote enquiry via the 900MHz network as well as SMS-alerting
- power supply: 10-60 VDC
- Scope of delivery: modem incl. protocol converter EBUW232, null modem cable, 9-pin. DSub connection cable
- Accessory (extract): aerial 3000GSM (dual-band industrial aerial with mounting), hat-rail power supply GNG 12/300, wall power supply GNG 12 LE, alarm monitoring module EBUW232 A

#### DFM 232 SET

Radio data transmission module set, 433 MHz, transmitter and receiver



- for the wireless monitoring of EASYBus-modules via a 433 MHz-network
- bidirectional RS232-interface (DB9), i.e. for connection of EBW 1
- High range up to 1500 m (in open field), range inside buildings similar to DECT.

#### LAN 3100

Gigabit Ethernet to USB converter



- For inquiring EASYBus modules, GMH handheld devices with interface or GDUSB 1000 via network.
- 2 USB ports for direct connection of EBW 3, USB 3100N or GDUSB 1000 (up to 15 with USB hub).
- Connection of EBW 1, EBW 64 or EBW 240 via USB adapter (included to scope of delivery)

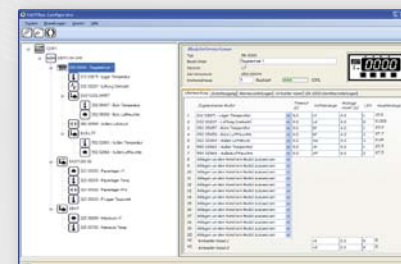
## Software \*

### Configuration software

#### EASYBus-Configurator

Description

gratis download



Software for the comfortable configuration of EASYBUS-systemes with or without EB 3000

- Min.-/max.- value adjustment
- Clear presentation in tabular form
- Arrange the measuring points via drag and drop



### Software

#### EASYControl net

Description



Software for long-term monitoring, recording, displaying and documenting of EASYBus sensor modules.

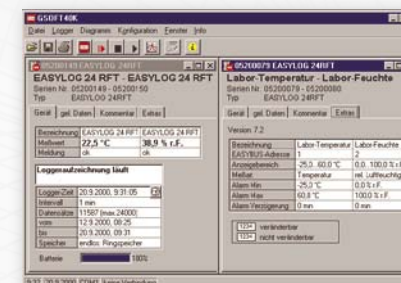
- Simultaneous use of several serial interfaces
- Decentralized visualisation on every computer on the network
- Display multiple graphs "live" in one chart
- Load ancient data an complete them with "live" data
- Visualisation: table, digital, tachometer, chart
- User accounts (with secured password transmission)
- Trigger EBB Out switching channels via EASYBus



### Read-out and operating software

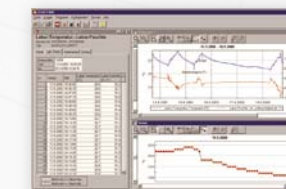
#### GSOF 40K

Description



Operating software for data loggers of the series EASYLog incl. connection cable EBSK 01

- Output of the logger data to printer
- Storage of logger data
- Export of the logger data to ASCII (text)
- Display of the logger data in diagram form
- Adjustment of the alarm function etc.
- Automated read-out / archiving
- Remote enquiry via telephone or mobile phone network



### Software for measuring data capture

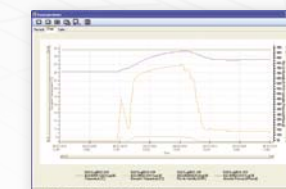
#### EBS 20M / EBS 60M

Description



Windows software for a low-cost realisation of a multi-channel measuring data capture system

- Simultaneous use of several serial interfaces
- Freely scaleable diagrams and alarm limits
- Visualisation: table, digital, chart
- Trusted data storage via SQL database







**Do you have further  
questions to the  
EASYBussystem?  
Please do not hesitate  
to contact us.  
We will happily advise you!**

**If you are interested, we will  
be pleased to forward you the  
actual product catalogue.**

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